PLANTAE COLOMBIANAE, X

I.—De Euphorbiaceis notae diversae.

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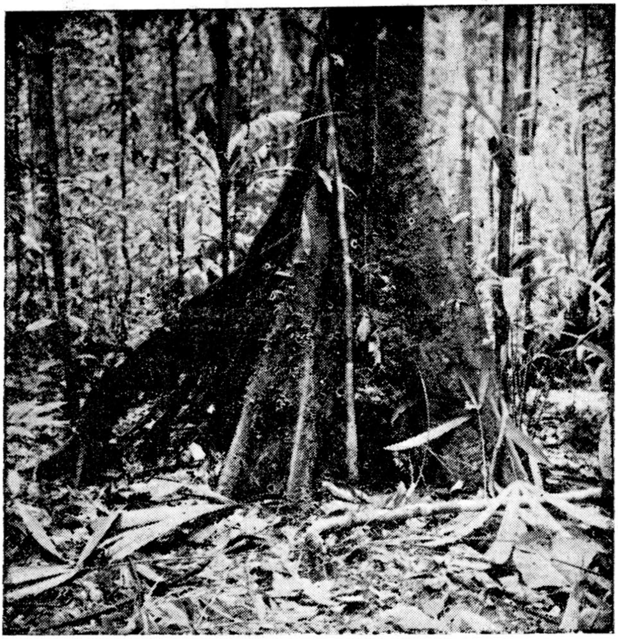
Cunuria Spruceana Baillon, Adansonia 4: 288. Aug. 1864; - Muell.-Arg. in D. C. Prodr. 15 (2), fasc. 2: 1123. Aug. 1866.

Clusiophyllum Sprucei Muell.-Arg. in Flora Ratisb. 47: 519. Oct. 1864.

This species, apparently rare in herbarium collections because of the extreme difficulty of collecting material, is one of three members of a genus confined to the Amazonian Valley. Where it occurs in the Lower Caquetá, Colombia, it is abundant, in some places (such as the lowermost portions of the slopes of Cerro de La Pedrera or Cupatí, near the Brazilian border) crowding out other common forest trees and forming pockets of almost pure stands. It does not occur over wide extensions, but seems to be localized in swampy or well-watered areas where rock outcrops (sandstone as well as granite) are frequent. It is almost invariably accompanied by *Hevea viridis* Huber.

The seeds of *Cunuria Spruceana* apparently contain a cyanide and, according to the natives, are extremely poisonous when taken internally in the crude state. The Indians of the lower Caquetá, however, consume quantities of the seeds in the form of a greyish mash which is prepared by boiling the pulp in three waters to remove the poison. This mash has a peculiar taste, somewhat like burnt potato. According to the natives, salt must not be added to this mash.

In north-western Brazil, the common name for *Cunuria Spruceana* is said to be "cunury". The white population of La Pedrera, in south-eastern Colombia, does not have any name for this tree, but the



Characteristic base of trunk of *Cunuria Spruceana* Baillon in the Miritiparaná region.
(Photo Schultes)

Indians of the Caquetá and Miritiparaná (*) refer to it as *"ko-no'-ko"* (Miraña) and *"ye'-cha"* (Yucuna and Karijona). It is interesting to note that the Karijonas, who are recent arrivals from the Upper Apaporis where *Cunuria Spruceana* is to all appearances not found, have borrowed the term *"ye-cha"* from their new neighbours, the Yucunas, of the Miritiparaná region.

(*) The Miritiparaná (literally "Miriti River") is indeed appropriately named. In the Lengua Geral, spoken along the Brazilian border in Colombia and in northwestern Brazil (a derivate of the language of the Guarani Indians of Brazil), the term "Mirití" or "Murití" refers to species of fan-leafed palms (*Mauritia* and *Mauritiella*). Above the lowermost rapid in the Miritiparaná, the river is a crystal-clear stream of "aguas negras" (black waters), flowing along through sandstone outcrops. Along the banks there are tens of thousands of the slender *Mauritiella aculeata* (HBK.) Burret, forming a picturesque arching avenue. I have never seen a river with such abundance of this graceful palm. The Ajajú, Macaya, Apaporis, and Lower Vaupés (below Yuruparí) have isolated clumps of *Mauritiella,* but they are never provided with mile-long stretches of uninterrutped colonies of the palm. In the *igapós* behind the river-bank, the Miritiparaná is abundantly provided with the taller and stouter *Mauritia minor* Burret, also called "Mirití" by the natives.

COLOMBIA: AMAZONAS: Angosturas, La Pedrera, in forest along slope of Cerro de La Pedrera (**), *R. E. Schultes 5869,* April 5, 1944, "Very tall tree, 90 to 100 feet; basal diameter up to 3 feet; buttress and stilt roots very characteristic. Latex very sparse, buff, not sticky. Bark smooth, hard, red-brown. Leaves glabrous, thick, coriaceus. Fruit large, egg-shaped, not trisulcate; valves splitting as in *Hevea,* woody; pericarp corky; seeds large, ellipsoidal, testa glossy, red-brown or light sepia with no markings". - AMAZONAS: Río Miritiparaná, vicinity of Campo Amor, *R. E. Schultes 5895,* April 20-25, 1944; - same locality, *R. E. Schultes 5932,* April 20-25, 1944, "Tall tree, 1½ foot in diameter, with huge stilt roots; bark dark brown. Latex sparse, sticky, white. Fruit capsular, valves falling to ground. Seeds large, ellipsoidal, reddish, poisonous. - AMAZONAS: La Pedrera, Cerro de La Pedrera, *R. E. Schultes 5989,* May 20, 1944, "Tree 50 ft. tall with a basal diameter of 8 inches. Buttress and stilt roots; sparse, thin, yellowish latex. Bark thin, dark brown".

Hevea guianensis var. **lutea** (Bentham) A. Ducke et R. E. Schultes comb. nov.

Siphonia lutea Spruce ex Benth. in Hook. Kew Journ. 6: 370. 1854.
Hevea lutea Muell-Arg. in Linnaea 34: 204. 1865-66.

Dr. Adolpho Ducke, after very extensive field studies in Brazil, and I, working in Colombia, have come to the conclusion that the concept which has been known as *"Hevea lutea"* represents merely a varietal form of the widely spread and exceedingly variable *Hevea guianensis* Aublet. Between typical *Hevea guianensis* and its variety *lutea* it is possible to find intergrades.

Hevea viridis var. **toxicodendroides** Schultes & Vinton, CALDASIA 3, No. 11: 25. Jul. 20, 1944.

On the plateau at Araracuara (the westernmost point reached by Martius in his exploration of the Japurá, *i. e.* Caquetá) *Hevea viridis* var. *toxicodendroides* is a very small and weak treelet. It is rarely branched, consisting usually of a single slender trunk two inches or less in diameter. It is a constituent of the tangled, low brush-forest which covers most of the plateau at Araracuara and is not found in

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(**) The lone hill of La Pedrera is the same *Cerro de Cupaty* where Martius collected in 1820 (see Dugand in Rev. Acad. Colomb. Ciencias V, 18: 212-216. Dec. 1942).

the open, sun-baked, sandstone savanna. At the type locality (Cerro de Chiribiquete in the Upper Apaporis), this treelet often completely dominates the savanna vegetation but it is very seldom found in the brush-forest.

COLOMBIA: CAQUETÁ: Rio, Caquetá, Cerro de Araracuara, May. 3, 1944, *R. E. Schultes 5961,* "Treelet never more than 8 ft. tall. Leaflets reclinate, but not conspicuosly folded along the midrib; glossy on both surfaces. Latex white."

The occurrence of var. *toxicodendroides* at Araracuara is of extreme interest as it indicates the probability of its occurrence on the almost continuous, as yet unexplored, sandstone *mesas* which intervene between Araracuara and Chiribiquete and the mountains of the Ajajú.

Senefeldera chiribiquetensis Schultes & Croizat, CALDASIA 3, No. 12: 122. Oct. 20, 1944.

During the year which has elapsed since the discovery on *Senefeldera chiribiquetensis* on the mountains of the Ajajú and Macaya Rivers, I have conducted a through search for this bushy species on neighbouring ranges in south-eastern Colombia. It does not occur on Cerro Circasia (Lower Vaupés, near Mitú), Cerro de La Pedrera (Middle Caquetá, near the Brazilian-Colombian border), Araracuara Upper Caquetá), Jerijerimo (Apaporis), nor, according to Mr. Paul Allen, on the Mesas de Cuduyarí (Lower Vaupés). Although the extraordinary abundance of this new species on the mountains of the Upper Apaporis basin would seem to indicate that it might be expected to occur over a wider range, it is now fairly certain that it is a rather restricted endemic.

II.—Investigationes specierum *Saurauiae*: locus tertius.

The following notes on new or otherwise interesting species of *Saurauia* in Colombia are presented as a further contribution to our knowledge of the composition and distribution of this genus.

Saurauia brachybotrys Turcz. in Bull. Soc. Nat. Moscou 31 (1858) 245. R. E. Schultes in CALDASIA 2, No. 6 (1943) 30.

Further information on the distribution of this species is given by the collections cited below which have been found to represent this concept.

COLOMBIA: CAUCA: Rio Hondo to Popayán, 1500-1700 m., July 4, 1922, *E. P. Killip 8258;* - CAUCA: Cordillera Central, vertiente occidental entre Popayán y Puracé, Quebrada de Aguarregada, 2050-2100 m., 30 diciembre 1942, *J. Cuatrecasas 13769,* "Arbol de 6 m., hoja herbáceo-coriácea, haz verde oscuro, envés verde medio, cáliz blanco verdoso, corola blanca, androceo amarillo".

Saurauia brachybotrys var. **macrantha** Busc. in Malpighia 25 (1912) 221 et *l. c.* 28 (1917) 31; - R. E. Schultes in CALDASIA 2, No. 6 (1943) 31.

This beautiful variety of *Saurauia brachybotrys* is not uncommon in the cordilleras of western Colombia.

COLOMBIA: EL VALLE: Cordillera Occidental, hoya del río Calima, El Cairo, entre Darién y Mediacanoa, 1650-1750 m., 6 enero 1943, *J. Cuatrecasas 13871,* Arbolito 6 m., cáliz verde claro por fuera, interiormente amarillo verdoso claro o blanco".

Saurauia choriophylla R. E. Schultes et G. Gutiérrez, spec. nov.

Folia rigide coriacea, lanceolato-elliptica, apice acuta, basi late cuneata vel subrotundata, margine integra, 20-23 cm. longa, 5.5-7 cm. lata; infra viridia pallida, glabra, verrucosa, nervis secundariis prominentibus, atrofuscis, minutissime strigilloso-puberulentis, plus minusve viginti-sex; supra atroviridia, glabra, subnitida, valde verrucosa, nervis haud elevatis. Ramuli robusti, fusci, sordide pulverulenti. Petiolo 3-5 (plerumque ad 3.5) cm. longi, robusti, sordide scabro-strigillosi.

Inflorescentiae pauciflorae, quam foliis multo breviores; pedicellis sordide denseque strigillosis, usque ad 7 cm. longis, 0.15 cm. diam. Bracteae siccae, minutae, triangulari-linguiformes, sordide denseque strigillosae, usque ad 0.3 cm. longae. Flores albi, parvi, usque ad 1 cm. in diam. sed saepissime minores; sepalis 5 aequalibus, subcoriaceis, ovatis vel saepe aliquid obovatis, apice obtusis, margine integris, 4 mm. longis, 3 - 3.5 mm. latis, extus omnino minute subechinatis atque minutissime albido-puberulentibus, intus laevibus sed maxime densissime molliterque minute lanato-puberulentibus. Petala ignota. Stamina plus minusve vigintiquinque, basi sine barba; antheris comparate magnis, perspicuis, flavis, 1.7 mm. longis, 0.6 mm. in diam. Ovarium elongato-ovoideum vel subglobosum, glabrum vel suglabrum, ad usque 2 mm. in diam. Styli quinque glabri, 0.3 mm. longi.

Fructus adhuc ignoti.

COLOMBIA: ANTIOQUIA: Fredonia (alt. 1600-1800 m.), December 20, 1927, *Rafael A. Toro 845* (TYPE in Herb. Fac. Agron., Medellín).

This new species represents one of the most distinctive of the Colombian species of this genus. Unfortunately, the type specimen (so far as we are aware, the only extant) has suffered somewhat from insect pests which destroyed the petals of the flowers completely. We have no hesitation, however, in describing this concept because of the numerous marked characters which differentiate it sharply from the other known species. The extremely rigid, coriaceous leaves (which are perfectly glabrous and slightly glossy above) are the most easily noted character of differentiation. This character is indicated by the specific epithet. The leaves are more narrowly lanceolate-elliptic than is usual in the genus, are strongly verrucose, and the flowers are extremelly small. Perhaps the most outstanding character, however, is the extraordinary appressed white lanate puberulence clothing the sepals both inside and out; the usual condition in this genus is a glabrous or, at the most, sparsely pilose interior surface of the sepals.

I am very happy to describe this new concept with my colleague, Señor Gabriel Gutiérrez, Associate-Curator of the Herbario Nacional Colombiano who, in reorganizing recently the herbarium of the Facultad Nacional de Agronomía in Medellín, first noted the collection as representing probably an undescribed species.

Saurauia floccifera Triana et Planchon in Ann. Sci. Nat. Sér. IV, 18 (1862) 267; Prodr. Fl. Novogranat. (1862) 264; - R. E. Schultes in CALDASIA 2, NO. 9 (1944) 316.

The two collections, *R. E. Schultes 5679* and *5684,* cited below, are topotypical, having been collected in the vicinity of Quetame along the Bogotá-Villavicencio highway. They are notable in having leaves which are somewhat smaller than those of the type.

A careful examination of *Saurauia floccifera* in the gorge through which the highway runs indicates that the leaves are rather generally smaller than those of the type. It is my belief that the type may have been collected from a forest where the plant grew in a shaded situation. At the present time, the hills along this gorge are partly, or, in many places, completely deforested, and the individuals of *Saurauia floccifera* are usually found isolated on grassy slopes. Near the lower range of the species, there are a number of individuals which occur in the forest, and it was noted that the leaves of these tend to be larger and thinner (*cf. O. Haught 2554*). Similarly, the collection of *L. Richter sine num.*, from a relatively low altitude in the same general region, has larger, more membranaceous leaves.

COLOMBIA: CUNDINAMARCA: near Quetame, alt. 2000 m., August 6, 1943, *R. E. Schultes 5679,* "Small bushy tree up to 12 ft. tall; flowers white, very fragrant; anthers yellow". Same locality, *R. E. Schultes 5684,* "Small shrub, 6 to 9 ft. tall; flowers white, fragrant". META: Guayabetal, alt. ca. 1100 m., Aug. 13, 1941, *L. Richter sine num.*

Saurauia parviflora Tr. & Planch. fma. **Lehmanniana** Buscalioni, Malpighia 25 (1912) 224 et *l. c.* 30 (1927) 81.

This is, apparently, a *forma* which is restricted to the low coastal forests of El Valle, Cauca and probably also Nariño. The type was collected near the río Timbiquí in Cauca, in country topographically and ecologically very similar to the río Yurumangui.

COLOMBIA: EL VALLE: Costa Pacífica, río Yurumangui, El Aguacate, 5-10 m. alt., 9 febrero 1944, *J. Cuatrecasas 16144,* "Arbolito de 4 metros, hoja verde grisácea, clara en el envés; pétalos blancos, estambres amarillos".

Saurauia pseudoleucocarpa Busc. in Malpighia 26 (1913) 328 et *l. c.* 27 (1916) 344 et *l. c.* 29 (1922) 342.

This species occurs in the Pacific coast of Colombia in the vicinity of Buenaventura and in Cauca. Probably also in southern Chocó.

COLOMBIA: EL VALLE: Cordillera Occidental, hoya del río Calima, El Cairo, entre Darién y Mediacanoa, 1650-1750 m., alt., *J. Cuatrecasas 13892,* "Arbolito; pedúnculos, sépalos y pétalos blancos; anteras amarillas".

Saurauia pycnotricha Turcz. in Bull. Soc. Nat. Moscou 31 (1858) 244.

The following collection, compared with authentic material at Paris by A. C. Smith, is a good representative of *Saurauia pycnotricha*. Predominantly a Venezuelan species, it is to be expected in collections from Santander del Norte.

COLOMBIA: SANTANDER: Rio Suratá valley, above Suratá, alt. 2000-2300 m., dense forest, Jan. 5-6, 1927, *E. P. Killip & A. C. Smith 16596,* "Tree 40-50 ft.; petals white, anthers yellow".

Saurauia Smithiana Busc. in Malpighia 26 (1913) 421 et *l. c.* 27 (1916) 346 et *l. c.* 29 (1923) 445.

This is apparently the most common species in the mountains of Santa Marta. The collection cited below, distributed as the Ecuadorean *Saurauia floribunda* Sprague, is referrible to *S. Smithiana.*

COLOMBIA: MAGDALENA: Santa Marta, Las Nubes, 4500 ft., December 16 (1898-1901), *H. H. Smith 809,* "Common... in damp forests and thickets near streams; flowers white. A tree to 20 ft.".

Saurauia ursina Tr. & Planch. in Ann. Sci. Nat. Sér. 4, 18 (1862) 265; Prodr. Fl. Novogranat. (1862) 262; - R. E. Schultes in CALDASIA 2, No. 6 (1943) 45.

This species seems to be extremely abundant in Antioquia where it is known as "Dulumoco". The two collections cited below, from the herbarium of the Facultad Nacional de Agronomía in Medellín, represent this concept.

COLOMBIA: ANTIOQUIA: Fredonia, June 30, 1927, *R. A. Toro 1039;* ANTIOQUIA: Támesis, Feb. 1, 1928, *R. A. Toro 956.*